

No.

7900072



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Agrigenetics Corporation, dba
GroAgri Seed Company
Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREBEUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF ~~seventeen*~~ YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS DESCRIBED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COTTON

'GSA 78'

CORRECTED CERTIFICATE

*Original issued June 19, 1980.

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D. C.
this 11th day of March in
the year of our Lord one thousand nine
hundred and eighty-eight.

Attest:

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service



Richard E. Lyng
Secretary of Agriculture

No.

7900072

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Growers Seed Association

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HERETO ANNEXED AND MADE A PART HEREOF AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF SEVENTEEN YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUSIVELY EXCLUDE OTHERS FROM SELLING THE VARIETY OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR BREEDING FROM IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY DERIVED THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS OWNED BY THE OWNER OF THE RIGHTS. (84 STAT. 1942, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

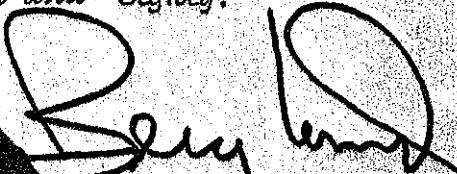
COTTON

'GSA 78'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 19th day of June in
the year of our Lord one thousand nine
hundred and eighty.

Sincerely,


Lyman L. Judd
Commissioner
Plant Variety Protection Office
Grain Division


Harry C. Smith

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

| | | | | |
|--|--|---|---|-----------------------------------|
| 1a. TEMPORARY DESIGNATION OF VARIETY <i>GSA 177 8/11/78</i> | | 1b. VARIETY NAME GSA 78 | FORM APPROVED OMB NO. 40-R3822 | |
| 2. KIND NAME COTTON | | 3. GENUS AND SPECIES NAME GOSSYPIUM HIRSUTUM | FOR OFFICIAL USE ONLY PV NUMBER 7800072 | |
| 4. FAMILY NAME (BOTANICAL) Mallow | | 5. DATE OF DETERMINATION October 1976 | FILING DATE 4-11-79 | TIME 12:00 A.M. P.M. |
| 6. NAME OF APPLICANT(S) <i>AGRI-GENETICS CORP JH 5/15/86 Growers Seed Association</i> | | 7. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code) P. O. Box 1656 Lubbock, TX 79408 | 8. TELEPHONE AREA CODE AND NUMBER 806-747-4125 | |
| 9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) CORPORATION | | 10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION TEXAS | 11. DATE OF INCORPORATION JULY 9, 1965 | |
| 12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: GEORGE B. BABCOCK, P. O. Box 1656 Lubbock, Texas 79408 | | | | |
| 13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> 13B. Exhibit B, Novelty Statement. <input checked="" type="checkbox"/> 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) <input checked="" type="checkbox"/> 13D. Exhibit D, Additional Description of the Variety. | | | | |
| 14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) | | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | | |
| 14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? | | <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED | | |
| 15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES (If "Yes," give name of countries and dates.) | | <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.) <i>JH 7/3/79</i> | | |
| 15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES (If "Yes," give name of countries and dates.) | | <input type="checkbox"/> NO (If "Yes," give name of countries and dates.) | | |
| 16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | | | | |
| 17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. | | | | |
| The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act. | | | | |
| Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties. | | | | |
| <i>3/29/79</i> (DATE) | | <i>George B. Babcock</i> (SIGNATURE OF APPLICANT) | | |

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

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GROWERS SEED ASSOCIATION

P.O. BOX 1656 LUBBOCK, TEXAS 79408 TEL. 806-747-4125

TWX 910-896-4381-GROWERSEED LBK

13A. EXHIBIT A. ORIGIN AND BREEDING HISTORY OF THE COTTON VARIETY
GSA 78

8/8/88
CA 614-65-2, CA 398 x CA 488
3/3/88

The new variety of cotton, GSA 78, was developed by cotton breeders of Growers Seed Association, selecting within a seed stock, ~~CA 1056-69-10(F₅)~~, ~~CA 803 x Ariz 6024~~, supplied by Dr. Levon L. Ray, May 18, 1970, Texas Agricultural Experiment Station.

This line had an unusual combination of earliness and tolerance to Verticillium Wilt. The plant was short, compact and had loose stormproof bolls. The line carried considerable heterozygosity. Mean fiber properties in 1969 were: 2.5 span length-1.12; 50% span length-.50; strength, PSI-93.0; and Micronaire-3.8.

(2) Selecting began in the fall of 1970, and continued in the fall of 1971. The 1971 crop of selections was screened for resistance to Verticillium Wilt and Bacterial Blight. High resistance to storm damage was stressed in the fall type. The 1971 crop of selections was put in storage due to resignation of the cotton breeder.

In the spring of 1974, some 100 selections made in 1971 were planted on Verticillium Wilt infested soil and breeding was resumed.

In the fall season mature plants found resistant to Verticillium Wilt were selected and sent to Iguala, Mexico and planted for increase. These selections had also been tested for resistance to several races of bacterial blight in the early growing season.

The seed increases at Iguala, Mexico were returned to the States in the spring of 1975, and planted on Verticillium Wilt infested soil. These increases were given the strain number 177.

This breeding procedure was continued through 1975-1976.

In the fall of 1977, enough seed was harvested from the best of the 177 strains and sent to Iguala, Mexico and planted to one acre of soil. The following spring the seed were harvested from the acre increase and shipped to the States. Seed from the one acre increase was used to plant 20 acres of increase. This acreage was harvested for further increase.

(cont.)

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(3) TYPE AND FREQUENCY OF VARIANTS

The 20 acre increase of GSA 177 was examined closely several times throughout the growing and mature seasons by the breeder and no off-type plants were found.

(4) EVIDENCE OF UNIFORMITY AND STABILITY

All increase plots of GSA 177 during the last three years of breeding were observed closely by the breeder and were uniform as to varietal type. The varietal type continued to breed true.

CM:mr





GROWERS SEED ASSOCIATION

P.O. BOX 1656 LUBBOCK, TEXAS 79408 TEL. 806-747-4125
 TWX 910-896-4381-GROWERSEED LBK

EXHIBIT B, NOVELTY STATEMENT
SIMILARITY

The new variety GSA 78, most closely resembles the variety Tamcot 788. The following characteristics are similar: foliage intermediate; leaf type normal; flower nectoried; petals cream colored; fruiting branch, determinate; gossypol condition, normal glands, normal bud gossypol; seed fuzz moderate (DPL 16) type; number lucules, 405; bolls pitted finely; boll type stormproof (Westburn 70) type.

DIFFERENCES

The new variety, GSA 78, is different from the variety Tamcot 788 in the following characteristics: plant habit is compact for GSA 78 and intermediate for Tamcot 788; main stem cm. to 1st fruiting branch 12 for GSA 78 and 15 for Tamcot 788; number nodes to first fruiting branch, 7 for GSA 78 and 9 for Tamcot 788; leaf pubescence, Stoneville 213 type for GSA 78 and Deltapine smooth leaf type for Tamcot 788; leaf color dark green (Acala 442) type for GSA 78 and light green for Tamcot 78; flower pollen, yellow for GSA 78 and cream for Tamcot 788; fruiting branch type normal for GSA 78 and short for Tamcot 788; bolls broader at the middle for GSA 78 and broader at the base for Tamcot 788; bracteoles breadth, length = width for GSA 78, and length is greater than width for Tamcot 788, teeth, course for GSA 78 and fine for Tamcot 788); disease, GSA 78 resistant to Verticillium Wilt, Tamcot 788 susceptible; GSA 78 resistant to five races of bacterial blight and Tamcot 788 resistant to race 1.

- 1) See attached table, Texas Agricultural Experiment Station Test results on Verticillium Wilt highly infested soil. These results corroborate breeders findings.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY

INSTRUCTIONS: See Reverse of this page regarding cotton variety.

NAME OF APPLICANT'S

GROWERS' SEED ASSOCIATION

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

P. O. BOX 1656 LUBBOCK, TEXAS 79408

Place cotton seed company's name:

P. O. BOX 1656 LUBBOCK, TEXAS 79408

FOR OFFICIAL USE ONLY

P.V.P. NUMBER 79000720 DATED 2/1/68

VARIETY NAME OR TEMPORARY DESIGNATION

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (e.g. 0 8 9 or 0 9) when number is either 99 or less or 9 or less.

1. SPECIES:

COTTON

1 Hirsutum

2 Barbudense

3 Glabratum

2. AREA(S) OF ADAPTION (0 = Not Tested, 1 = Not Adapted, 2 = Adapted):

0 SOFT MEGAW EASTERN

1 VIGOROUS DELTA

0 CENTRAL

0 BREWER

2 ALLEN HIGH PLAINS

0 FAYE 0 EL PASO AREA

0 WESTERN LOW HOT VALLEYS

0 SAN JOAQUIN

OTHER (Specify)

3. MATURITY (50% Open Boll):

0 5 NO. OF DAYS EARLIER THAN

7 NO. OF DAYS LATER THAN

1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213
4 = PAYMASTER 111 5 = ACALA 1517-70 6 = ACALA SJ-1

4. PLANT HABIT:

3 1 = SPREADING 2 = INTERMEDIATE 3 = COMPACT

1 = FOLIAGE SPARSE 2 = DENSE
3 = OTHER (Specify) INTERMEDIATE

5. PLANT HEIGHT:

3 0 CM. SHORTER THAN

1 CM. TALLER THAN

1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213
4 = PAYMASTER 111 5 = ACALA 1517-70 6 = ACALA SJ-1

6. MAIN STEM:

3 1 = LAX 2 = ASCENDING 3 = ERECT

12 CM. TO FIRST FRUITING BRANCH

0 7 NO. OF NODES TO FIRST FRUITING BRANCH
(from cotyledony node)

7. LEAF:

1 2 CM. WIDTH GREATEST AT MATURITY

8. LEAF PUBESCENCE:

1 = GLABROUS (HAIRS AS SPARSE AS D. SMOOTH)

WIDEST LEAVES AT MATURITY

2 = SMOOTH LEAF (DELTAPINE SMOOTH LEAF)

3 = PUBESCENT (STONEVILLE 213)

AT MATURITY

3 = HEAVY PUBESCENCE (H_1 OR H_2)

5 = OTHER (Specify)

9. LEAF COLOR:

3 1 = VIRESCENT YELLOW

2 = LIGHT GREEN

3 = DARK GREEN (ACALA-442)

4 = RED

5 = OTHER (Specify)

10. LEAF TYPE:

1 1 = NORMAL

2 = OKRA

3 = SUPER OKRA

4 = OTHER (Specify)

11. FLOWER:

2 1 = NECTARLESS

2 = NECTARIED

3 = NECTARIN

4 = NECTAROID

12. CYCLOPS:

1 Petals:

1 = CREAM

2 = YELLOW

3 = PINK

2 = OCHRE

3 = CREAM

4 = PINK

5 = PINK

3 = OCHRE

4 = CREAM

5 = PINK

6 = PINK

4 = OCHRE

5 = CREAM

6 = PINK

7 = PINK

13. GOSSYPOLE CONDITION:

1 1 = GLANDLESS

2 = REDUCED GLANDS

3 = NORMAL GLANDS

4 = EXCESSIVE GLANDS

5 = OTHER (Specify)

14. SEEDS:

1 3 0 ± 1 0 SEED INDEX

(Fuzzy seed basis)

2 Seed Fuzz:

1 = SPARSE (GREGG 35) 2 = MODERATE (DPL-16)

3 = HEAVY (ACALA SJ-1) 4 = OTHER (Specify)

GSA 78

| | | | | | | | | | | |
|---|---|----------|--------|--|--|--|---|---|--------------|-------------------|
| 15. BOLLS: | 1 | 3 | 4 | 0 | SEED INDEX | 3 | SEED INDEX | 3 = HEAVY 4 = AVERAGE 5 = LIGHT | 7900072 | TESTS (2 DECIMAL) |
| <input checked="" type="checkbox"/> 2. Lenticels: | 2 | 4 | 5 | | 3 2 NO. SEEDS PER BOLL | 3 | 4 8 LINT PERCENT | 3 = MODERATE 4 = HIGH 5 = HIGH AND COARSE | MM. DIAMETER | |
| <input checked="" type="checkbox"/> 3. OVALS: | 1 | 2 | 3 | NONE | 3 = BREVITATE 4 = ELLIPTICAL 5 = WOONHAWA | T | 3 = HIGH AND COARSE 4 = MEDIUM 5 = LOW AND COARSE | | | |
| <input checked="" type="checkbox"/> 2. Pitted: | 2 | 3 | FINELY | 5 7 6 GRAMS SEED COTTON PER BOLL | 2 | Breadth: 1 = FIBRO-BRADING AT BASE 2 = BROADER AT MIDDLE | | | | |
| <input checked="" type="checkbox"/> 3. COURSELY | 3 | COURSELY | | | | | | | | |
| <input checked="" type="checkbox"/> 4. STOMATES: | 1 | 2 | 3 | 1 = STORMPROOF (WESTBURN 70) 2 = STORMRESISTANT (LANKART 57) 3 = OPEN (DELTAPINE 16) | 3 = DETERMINATE 1 = LENGTH < WIDTH 2 = LENGTH = WIDTH 3 = LENGTH > WIDTH | | | | | |
| <input checked="" type="checkbox"/> 5. BRACOLEES: | 1 | 2 | 3 | 1 = FINE 2 = COURSE | 3 = Shape: 1 = LENGTH < WIDTH 2 = LENGTH = WIDTH 3 = LENGTH > WIDTH | | | | | |
| <input checked="" type="checkbox"/> 6. YIELD: Compared to... | 1 | 0 | 0 | PERCENT LESS THAN | 4 = OTHER (Specify) 8-11 | | | | | |
| <input checked="" type="checkbox"/> 7. YIELD: Compared to... | 2 | 0 | 0 | PERCENT MORE THAN | 5 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213 | | | | | |
| <input checked="" type="checkbox"/> 8. FIBER LENGTH (Complete one or more of the following and give the means): | 1 | 0 | 0 | PERCENT LESS THAN | 4 = PAYMASTER 111 5 = ACALA 1517-70 | | | | | |
| <input checked="" type="checkbox"/> 9. FIBER LENGTH (Complete one or more of the following and give the means): | 2 | 0 | 0 | PERCENT MORE THAN | 7 = ACALA SJ-1 6 = ACALA SJ-1 7 = LANKART 57 | | | | | |
| <input checked="" type="checkbox"/> 10. SPAN LENGTH 50% SPAN LENGTH 50% | 3 | 4 | 5 | SPAN LENGTH 2.5% SPAN LENGTH 2.5% | 3 = COKER 310 4 = PAYMASTER 111 5 = ACALA 1517-70 | | | | | |
| <input checked="" type="checkbox"/> 11. MEAN LENGTH | 1 | 1 | 4 | MEAN LENGTH | 6 = ACALA SJ-1 7 = LANKART 57 | | | | | |
| <input checked="" type="checkbox"/> 12. UNIFORMITY RATIO (MEAN/U.H.M.) | 3 | 3 | 3 | UNIFORMITY INDEX (50%-SPAN/2.5%-SPAN) | 8 = STILOMETER T 9 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 13. FIBER STRENGTH AND ELONGATION: | 3 | 9 | 0 | 1,000 PSI. | 10 = STILOMETER T 11 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 14. MICRONAIRE READING | 3 | 8 | 0 | MICRONAIRE READING | 12 = STILOMETER T 13 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 15. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) | 2 | 0 | 0 | 0 | 14 = STILOMETER T 15 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 16. VERTICILLIUM WILT | 0 | 0 | 0 | 0 | 16 = STILOMETER T 17 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 17. BACTERIAL BLIGHT (Race 2) | 0 | 0 | 0 | 0 | 18 = STILOMETER T 19 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 19. ANTHRACNOSE | 0 | 0 | 0 | 0 | 20 = STILOMETER T 21 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 21. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) | 0 | 0 | 0 | 0 | 22 = STILOMETER T 23 = STILOMETER T | | | | | |
| <input checked="" type="checkbox"/> 23. OTHER (Specify) | 0 | 0 | 0 | 0 | 24 = STILOMETER T 25 = STILOMETER T | | | | | |

REFERENCES: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

- (1) Brown, Harry B., and J. O. Ware, 1958, Cotton, McGraw-Hill Book Company, Inc., New York.
- (2) Lewis, C. F., and H. H. Ramey, Jr., 1971, 1970 Regional Cotton Variety Tests, ARS 34-130, United States Department of Agriculture.

COLORS: Nickerson's or any recognized color fan may be used to determine flower color of the described variety.



GROWERS SEED ASSOCIATION

P.O. BOX 1656 LUBBOCK, TEXAS 79408 TEL. 806-747-4125
TWX 910-896-4381-GROWERSEED LBK

EXHIBIT D ADDITIONAL DESCRIPTION OF THE VARIETY

The new variety of cotton, GSA 78, is unique in that it has a very high resistance to Verticillium Wilt, a disease very destructive to cotton production on the High Plains of Texas, coupled with relatively early production and maturity. The plants load up with fruit form^s and bolls in the presence of a soil contaminated with the Verticillium Wilt organism.

The variety GSA 78, has a high resistance to several races of bacterial blight which protects the leaf surface during photosynthesis in developing crop.

7900072

Table 4. Results of the Verticillium Wilt Resistant Cotton Variety Test at Lubbock, 1978.

| Variety | Boll properties | | | | | | | | | | Fiber properties | | | | | | Wilt infection, % |
|------------------------|-------------------------|------|---------------------|--------|--------------------------|--------|-------------------------------------|-------|-----------------------|-------|------------------|-------|---------------------------------|------|-----------------------------|-----|-------------------------|
| | Yield, lbs. per acre | | Classer's: Grade | | Gin turn- out % | | Gin waste, boll lbs./ bale | | Lint seed index | | Seed index | | Micro- fibre length mm | | Strength uni. gms/tex | | |
| | Lint | Seed | Staple | Staple | Grains | Cotton | Grams | Grams | Seed | Index | Ball | Naire | Uni. | Uni. | Uni. | | |
| GSA 78 | 889 | 1535 | 51-51 | 33.0 | 24.4 | 432 | 5.70 | 38.2 | 7.05 | 11.0 | 30.6 | 3.1 | 1.04 | .75 | 21.0 | 26 | |
| Stonyville 6B302-33032 | 870 | 1950 | 41-41 | 33.5 | 22.0 | 533 | 5.69 | 34.5 | 6.81 | 12.9 | 28.0 | 3.6 | 1.07 | .82 | 24.5 | 12 | |
| Ranger R-12 | 835 | 1511 | 41-41 | 33.0 | 24.2 | 441 | 5.15 | 37.7 | 6.90 | 11.4 | 27.3 | 3.8 | 1.03 | .81 | 22.5 | 18 | |
| Dawson V-14 | 820 | 1643 | 41-41 | 33.5 | 24.4 | 432 | 5.21 | 37.4 | 6.46 | 10.8 | 29.3 | 3.5 | 1.03 | .79 | 24.0 | 21 | |
| Paymaster 785 | 819 | 1441 | 41-42 | 32.0 | 24.8 | 419 | 6.34 | 39.1 | 7.70 | 12.5 | 30.5 | 3.7 | 0.96 | .79 | 24.0 | 30 | |
| Ranger R-14-14 | 803 | 1473 | 41-41 | 33.5 | 25.1 | 406 | 5.11 | 38.0 | 6.87 | 11.2 | 27.4 | 3.7 | 1.03 | .81 | 23.0 | 21 | |
| GSA 74 | 785 | 1496 | 51-51 | 34.0 | 23.3 | 476 | 4.95 | 36.8 | 6.23 | 10.7 | 28.4 | 3.6 | 1.12 | .80 | 22.5 | 16 | |
| Paymaster 303 | 757 | 1516 | 41-51 | 33.5 | 22.0 | 532 | 6.06 | 36.1 | 7.23 | 12.8 | 29.4 | 3.2 | 1.05 | .77 | 21.0 | 27 | |
| All-Tex Wiltmaster 569 | 734 | 1495 | 51-41 | 32.5 | 22.6 | 505 | 5.94 | 35.3 | 6.79 | 12.5 | 29.9 | 3.3 | 1.04 | .79 | 23.0 | 25 | |
| Paymaster 266 | 714 | 1458 | 41-41 | 33.0 | 22.4 | 513 | 5.91 | 35.6 | 6.41 | 11.6 | 31.9 | 3.4 | 1.03 | .81 | 24.5 | 126 | |
| Pioneer Brand X99-5 | 713 | 1434 | 51-41 | 33.0 | 22.8 | 497 | 5.70 | 35.5 | 6.66 | 12.1 | 29.5 | 3.3 | 1.03 | .78 | 23.5 | 34 | |
| Dawson E-10 | 673 | 1497 | 41-51 | 33.5 | 23.5 | 468 | 5.27 | 34.8 | 6.12 | 11.5 | 29.1 | 3.3 | 1.08 | .77 | 24.0 | 36 | |
| Acala 1517-70 | 672 | 1424 | 51-51 | 35.0 | 20.5 | 606 | 5.87 | 34.2 | 6.93 | 13.3 | 28.1 | 3.1 | 1.17 | .80 | 26.5 | 34 | |
| Tricot SP-215 | 639 | 1248 | 41-51 | 33.5 | 24.1 | 446 | 5.71 | 37.4 | 6.51 | 10.9 | 31.8 | 2.7 | 1.06 | .74 | 20.5 | 34 | |
| Deltapine SP-5 | 585 | 1141 | 41-51 | 33.0 | 23.3 | 477 | 5.50 | 36.2 | 6.36 | 11.2 | 30.4 | 3.2 | 1.04 | .79 | 23.0 | 43 | |
| McChair 308 | 581 | 1196 | 51-51 | 34.5 | 21.5 | 555 | 5.75 | 35.1 | 6.63 | 12.3 | 29.6 | 3.0 | 1.14 | .75 | 24.0 | 51 | |
| Tricot 738 | 558 | 1174 | 51-51 | 34.0 | 22.0 | 532 | 5.81 | 35.6 | 6.17 | 11.2 | 32.5 | 2.8 | 1.10 | .77 | 24.5 | 43 | |
| Pioneer Brand X8009 | 557 | 1124 | 51-51 | 33.0 | 22.6 | 504 | 5.41 | 36.0 | 6.16 | 11.0 | 30.7 | 2.6 | 1.06 | .74 | 23.0 | 50 | |
| Cascot L-7 | 537 | 998 | 51-41 | 33.5 | 24.3 | 437 | 5.16 | 38.0 | 6.19 | 10.1 | 30.8 | 3.0 | 1.10 | .76 | 22.0 | 44 | |
| GSA 71 | 482 | 1038 | 51-51 | 33.0 | 20.5 | 606 | 5.80 | 35.0 | 6.82 | 12.7 | 28.9 | 2.8 | 1.03 | .78 | 22.5 | 49 | |
| Velcot 277 | 459 | 973 | 51-51 | 34.0 | 19.5 | 659 | 5.80 | 35.7 | 6.88 | 12.4 | 29.2 | 2.7 | 1.15 | .75 | 23.0 | 39 | |
| Macha WR-2 | 360 | 714 | 51-51 | 33.5 | 21.1 | 575 | 6.14 | 37.3 | 7.19 | 12.1 | 30.9 | 2.7 | 1.00 | .78 | 22.5 | 55 | |
| L.S.O. | 80 | 159 | | 1.0 | 1.6 | 74 | 0.44 | 1.4 | 0.45 | 0.3 | 2.2 | 0.34 | 0.02 | 1.9 | 2.2 | | |

